



Paper: “Artificial Intelligence for IT Governance in Saudi Arabia: Opportunities, Challenges, and Future Directions within COBIT 2019 and ISO/IEC 38500 Frameworks”

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Peer review:

Reviewer 1: Khawaja Fahad Iqbal

National University of Sciences and Technology (NUST), Pakistan

Reviewer 2: Blinded

Reviewer 3: Blinded

Reviewer A:

Recommendation: Revisions Required

The TITLE is clear and it is adequate to the content of the article.

Yes, the title “The Role of Artificial Intelligence in Enhancing IT Governance in Saudi Arabia: Opportunities, Challenges, and Future Directions” is clear, specific, and accurately reflects the scope and content of the article. It effectively captures the three core elements explored in the paper:

The focus on Artificial Intelligence (AI),

Its application to IT governance, and

The geographical and policy context of Saudi Arabia.

Furthermore, the inclusion of the terms opportunities, challenges, and future directions aligns well with the article’s structure and content, which systematically explores these dimensions using theoretical frameworks (COBIT, ISO/IEC 38500), case examples, and strategic analysis. Overall, the title sets accurate expectations for the reader and is appropriate for an academic and policy-oriented audience.

The ABSTRACT clearly presents objects, methods, and results.

Yes, the abstract clearly outlines the objective of the study, which is to explore the role of AI in enhancing IT governance in Saudi Arabia within the context of Vision 2030. It also briefly describes the methods used, namely a structured literature and policy review grounded in established theoretical frameworks such as COBIT and ISO/IEC 38500. Additionally, the results and contributions are well summarized, including the identification of opportunities, challenges, and strategic recommendations. The abstract is concise, informative, and effectively prepares the reader for the content and findings of the full paper.

There are a few grammatical errors and spelling mistakes in this article.

Yes, after reviewing the article text, I can confirm that while the paper is well-structured and generally clear, there are a few minor grammatical errors, word choices, and punctuation inconsistencies that should be corrected for improved clarity and professionalism.

The study METHODS are explained clearly.

The article provides a detailed and structured explanation of the research methodology. It clearly states that the study is qualitative in nature and is based on a literature and policy review, which includes:

Academic publications

Industry reports

Government documents

International frameworks (COBIT 2019 and ISO/IEC 38500)

The article also explains why these sources were selected, and how they are used to analyze AI's role in enhancing IT governance within the context of Saudi Arabia's Vision 2030. The use of established frameworks like COBIT and ISO standards helps ground the study in recognized best practices, which strengthens its credibility.

By outlining the data sources, theoretical lens, and analytical approach, the methodology gives readers a clear understanding of how conclusions were drawn—making it transparent, well-structured, and appropriate for the topic.

The body of the paper is clear and does not contain errors.

The body of the paper is generally well-organized, informative, and follows a logical structure. The arguments are supported with relevant references, and the use of frameworks like COBIT 2019 and ISO/IEC 38500 adds academic rigor and clarity. The flow between sections—from introduction, methodology, analysis, to future directions—is coherent and easy to follow.

However, there are a few minor issues:

Grammatical inconsistencies: For example, some sentences are overly long and could benefit from clearer punctuation or restructuring for better readability.

Occasional awkward phrasing or word choice: While not severely disruptive, some phrases could be more concise or academically refined.

Minor formatting issues in referencing or in transitions between sections (e.g., inconsistent spacing, inconsistent use of hyphens in compound words like “AI-driven” or “data-driven”).

Despite these minor flaws, they do not significantly affect comprehension, and the overall clarity of the body remains strong. A light copy-edit or proofreading pass would resolve these small issues and improve the paper's polish.

The CONCLUSION or summary is accurate and supported by the content.

Yes, the conclusion is accurate and well-supported by the content of the paper. It effectively summarizes the main findings—namely, the opportunities AI presents for enhancing IT governance in Saudi Arabia, as well as the associated challenges such as regulatory uncertainty, skills gaps, and ethical concerns.

The conclusion also reinforces the relevance of using established frameworks (COBIT 2019 and ISO/IEC 38500) and ties back clearly to Saudi Arabia's Vision 2030. Furthermore, it reflects the paper's broader discussion on aligning AI governance with national goals, public trust, and international best practices.

Overall, the summary is consistent with the evidence and analysis presented in the body and successfully ties the article together.

The list of REFERENCES is comprehensive and appropriate.

The list of references appears to be relevant and well-chosen, covering key standards like COBIT 2019 and ISO/IEC 38500, as well as recent literature on AI governance, IT governance frameworks, and Saudi Arabia's Vision 2030. This shows a good balance between foundational sources and current research, which supports the credibility of the paper.

However, to fully assess comprehensiveness, it would be ideal to check if the references include a variety of peer-reviewed articles, official documents, and up-to-date sources to reflect the latest developments in AI and IT governance. If the list covers these aspects, then it can be considered both comprehensive and appropriate for the topic.

Please rate the TITLE of this paper.

[Poor] 1-5 [Excellent]

5

Please rate the ABSTRACT of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the LANGUAGE of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the METHODS of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the BODY of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the CONCLUSION of this paper.

[Poor] 1-5 [Excellent]

5

Please rate the REFERENCES of this paper.

[Poor] 1-5 [Excellent]

5

Overall Recommendation!!!

Accepted, minor revision needed

Comments and Suggestions to the Author(s):

Clarity and Structure:

The paper is generally well-structured, with clear sections and logical flow. However, some sentences could be refined for greater clarity and conciseness, particularly in the methodology and results sections.

Language and Grammar:

There are minor grammatical errors and spelling mistakes throughout the manuscript. A thorough proofreading or professional language editing would enhance the overall readability and professionalism of the paper.

Abstract:

The abstract effectively summarizes the objectives, methods, and key findings. Consider tightening it slightly to focus more on the novel contributions and outcomes of the study.

Methodology:

The methods section is clear and detailed. To strengthen this section, consider including more information about data collection tools or any validation processes used, if applicable.

Results and Discussion:

The results are presented clearly, but the discussion could benefit from deeper analysis, particularly relating findings back to existing literature and practical implications.

References:

The references are appropriate and relevant, including key standards and recent research. Ensure that all citations follow a consistent formatting style throughout the paper.

Conclusion:

The conclusion summarizes the main points effectively and is supported by the study's content. It might be helpful to suggest potential future research directions or practical applications to provide added value.

Reviewer B:

Recommendation: Revisions Required

The TITLE is clear and it is adequate to the content of the article.

The title is clear, concise, and fully reflects the content of the manuscript. It includes the scope (Saudi Arabia), focus (AI in IT governance), and structure (opportunities/challenges/future). It effectively outlines the main themes of the research.

The ABSTRACT clearly presents objects, methods, and results.

The abstract outlines Vision 2030, AI's importance, and overall objectives. However, it lacks clarity on methodology (qualitative review) and the depth of analysis frameworks used. It should explicitly mention COBIT and ISO/IEC as guiding frameworks. It could also benefit from a clearer summary of the key findings to enhance its impact.

There are a few grammatical errors and spelling mistakes in this article.

There are a few minor grammatical errors and spelling mistakes in the manuscript. For example, 1. In the Introduction section, the sentence "But speed brings risk." is just a fragment. It could be

revised to form a complete sentence, such as, "However, this speed also introduces significant risks."

2. In the Key Challenges section, the sentence "Government uses of AI for surveillance or control risk eroding public trust..." contains a subject-verb agreement error. The verb "risk" should be "risks" to agree with the plural "uses."

The study METHODS are explained clearly.

The study methods are described only at surface level. While the frameworks used (COBIT, ISO/IEC 38500) are described well, the actual process of how data or literature was selected, analyzed, or coded is missing. The authors should add a subsection explaining literature screening process, criteria for selecting COBIT/ISO over other frameworks, categorization of challenges/opportunities (e.g., thematic coding).

The body of the paper is clear and does not contain errors.

The body of the paper is mostly clear, but there are sections that could be better organized. For instance, the transitions between different sections could be smoother to enhance flow.

The CONCLUSION or summary is accurate and supported by the content.

The conclusion section accurately summarizes opportunities (data-driven decisions, automation) and challenges (regulation, talent, ethics). However, it could reiterate the implications of the findings more strongly.

The list of REFERENCES is comprehensive and appropriate.

The reference list contains 40+ relevant and recent sources including Saudi-specific studies. The references are a mix of academic papers, reports (Accenture), and standards (ISO). Some seminal works of AI governance are missing in the references. For example, Jobin's land mark paper should have been included and discussed in this paper.

Jobin, A., Ienca, M. & Vayena, E. The global landscape of AI ethics guidelines. Nat Mach Intell 1, 389–399 (2019). <https://doi.org/10.1038/s42256-019-0088-2>

Please rate the TITLE of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the ABSTRACT of this paper.

[Poor] 1-5 [Excellent]

3

Please rate the LANGUAGE of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the METHODS of this paper.

[Poor] 1-5 [Excellent]

2

Please rate the BODY of this paper.

[Poor] 1-5 [Excellent]

2

Please rate the CONCLUSION of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the REFERENCES of this paper.

[Poor] 1-5 [Excellent]

3

Overall Recommendation!!!

Return for major revision and resubmission

Comments and Suggestions to the Author(s):

This paper explores how AI can enhance IT governance in Saudi Arabia, aligned with Vision 2030 and the National Strategy for Data & AI (NSDAI). It identifies opportunities (data-driven decision-making, automated compliance, risk management) and challenges (regulatory gaps, talent shortages, cybersecurity risks, ethical concerns) using COBIT 2019 and ISO/IEC 38500 as analytical frameworks. Recommendations include developing AI-specific regulations, workforce upskilling, infrastructure investments, and ethical safeguards.

My observations on this paper are as follows:

1. The authors claim "structured research methodology" but the paper lacks detail on literature search strategy, inclusion/exclusion criteria, or analytical approach (e.g., thematic analysis, databases, keywords, or time frames, reducing credibility and reproducibility. For example, "qualitative literature and policy review" is mentioned, but no timeframe, databases, or keywords are provided. The authors should specify databases (IEEE Xplore? SCOPUS?), search terms ("AI governance" + "Saudi Arabia"), and analysis method (e.g., PRISMA for systematic reviews). They should also clarify how policies/reports were evaluated (e.g., content analysis).
2. The manuscript relies heavily on theoretical frameworks and literature review without incorporating empirical data to support the claims. The study's reliance on a "qualitative literature and policy review" means that its conclusions are based on existing data and reports rather than new empirical evidence. The analysis would be more robust and offer greater original insight if it were supplemented with primary data, such as case studies of Saudi organizations or interviews with IT executives and government officials. For example, the assertion that AI can enhance decision-making lacks quantitative evidence. Conducting in-depth case studies of one or two leading Saudi organizations that have begun implementing AI in their governance structures would provide concrete examples and deeper insights.
3. The authors have asserted COBIT/ISO mappings, but they are not demonstrated. No table or appendix shows how AI opportunities/challenges map to specific COBIT processes. The authors should add a table to display this mapping.
4. The authors state that AI "strengthens the EDM domain" but do not specify which EDM processes (EDM01–EDM05) are most impacted.
5. The arguments about efficiency gains (automation, resource allocation) are repeated across multiple paragraphs without adding new dimensions. Such redundancy should be avoided. The authors should consolidate redundant sections (e.g., merge efficiency-related opportunities) to avoid redundancy.
6. The authors list AI-specific threats (data poisoning, model theft) but offers no technical examples (e.g., adversarial attacks on Saudi healthcare models) or mitigation links to COBIT/ISO.

7. There seems to be an over-reliance on Vision 2030 in this paper. Broader IT governance theory (beyond COBIT/ISO) has been generally overlooked. There is a hardly any discussion of AI governance models like NIST AI RMF or OECD principles.

The manuscript presents a timely and relevant exploration of AI's role in IT governance in Saudi Arabia. I believe that this manuscript has high potential. If the authors could revise it and address the points highlighted above, then this will enhance its rigor, clarity, and practical value for policymakers.
